

APPLICANT: Daniel YELLIN
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REMARKS

Applicant has carefully studied the outstanding Office Action. The present amendment is intended to be fully responsive to all points of rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application is respectfully requested.

Specification

The article by C.E. Shannon, "*A mathematical theory of communication*", Bell System Technical Journal, 27, 1948, is submitted herewith for the Examiner's consideration.

The article by J. Salz and E. Zehavi, "*Decoding under integer metric constraints*", IEEE Transactions on Communications, vol. 43, pp.307-317, 1995, is submitted herewith for the Examiner's consideration.

The article by Onyszchuk et al., "*Quantization loss in Convolutional Decoding*", IEEE Transactions on Communications, vol. 41, pp. 261-265, 1993, is submitted herewith for the Examiner's consideration.

Chapter 5 of Error-Correction Coding for Digital Communications, pub. 1981, by G.C. Clark Jr. and J. Bibb Cain, is submitted herewith for the Examiner's consideration.

These articles were disclosed in an Information Disclosure Statement filed Dec. 7, 2000. **The Examiner is requested to confirm receipt of this Information Disclosure Statement. The Examiner is requested to confirm consideration of the articles and patents disclosed therein by signing the Information Disclosure Statement.** Copies of the articles were sent to the United States Patent and Trademark Office in connection with the parent application, (now U.S. Patent 6,047,035), of which the instant application is a continuation.

The Examiner has written: Page 2, lines 1-3, "Unfortunately, ... ad-hock solutions are often used" is not clear as to what it means. In addition, line 2, "(see e.g. Salz and Zehavi)" where is it? and "ad-hock solutions" what are these solutions?

The first paragraph on page 2 has been amended to include a complete reference to J. Salz and E. Zehavi, "*Decoding under integer metric constraints*", IEEE Transactions on Communications, vol. 43, pp.307-317, 1995. The first paragraph on page 2 has also been amended to delete the sentence "Accordingly, ad-hock solutions are often used". Applicant

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respectfully asserts that these amendments fully address the Examiner's issues with regard to the first paragraph on page 2. Applicant also notes that the opening paragraphs of the Salz and Zehavi reference state the following (emphasis added):

In this paper we examine the problem of decoding coded digital data when soft decisions are constrained to take on values from a finite set of possible metrics (integer values). This is an important practical consideration since actual decoders must inherently use finite precision arithmetic while optimum decision rules require the evaluation of likelihood functions, which for real transmission channels assume a continuum of values.

In order to circumvent these nonphysical specifications, ad-hoc approaches are usually proposed such as, for example, quantizing the received signals or quantizing the continuous decision functions themselves. While these solutions often seem reasonable, the concomitant consequences in terms of performance degradation are extremely difficult to assess.

Summary of the Invention

The Examiner has requested that a new Summary of the Invention be submitted because the old Summary was deleted as requested by the Applicant.

However, Applicant would like to kindly point out that both the MPEP and 37 CFR 1.73 do not require the presence of a "Summary of the Invention." They merely indicate where in the application the "Summary of the Invention" should be placed. 37 CFR 1.73 only states that a "Summary of the Invention" should or may be included. It does not state "must" or "shall". Accordingly, Applicant has elected not to include a "Summary of the Invention" as this is within the discretion and right of the Applicant.

Status of Claims

Claims 1 - 3, 5 - 14, 18, 21 - 25 and 28 - 32 are pending in the application. Claims 1 - 3, 5 - 14, 18, 21 - 25 and 28 - 32 have been rejected.

Claims 1 - 3, 5 - 12, 14, 18, 21 - 24, and 29 - 31 have been amended. Applicant respectfully asserts that these amendments do not add new matter. Claims 2 - 3, 5, 7, 8, 10, 12, and 21 have been amended voluntarily, and amendments to claims 2 - 3, 5, 7, 8, 10, 12,

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Claim 9

The Office Action states that "as per claim 9, line 3, "the RMS" does not have a clear antecedent basis and "RMS" should be spelled out."

Claim 9 as amended now recites "estimating a root-mean-square (RMS) of said received signal", thus correcting the issue of antecedent basis.

Claim 11

The Office Action states that "as per claim 11, line 2, "said samples" does not have a clear antecedent basis."

Claim 11 as amended now recites "normalizing said received signal", thus correcting the issue of antecedent basis.

Claim 14

The Office Action states that "as per claim 14, line 7, "the fading characteristics" does not have a clear antecedent basis."

Claim 14 as amended now recites "to detect fading characteristics", thus correcting the issue of antecedent basis.

Claim 18

The Office Action states that "as per claim 18, line 7, "the fading characteristics" does not have a clear antecedent basis."

Claim 18 as amended now recites "to detect fading characteristics", thus correcting the issue of antecedent basis.

The Office Action states that "as per claim 18, line 15, "the demodulated segment" does not have a clear antecedent basis, and "said at least one segment" does not have a clear antecedent basis."

Claim 18 as amended now recites "to correct a demodulated segment", thus correcting the issue of antecedent basis. The language of "said at least one segment" at line 15 has not

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been amended, however, as it has antecedent basis from line 11 as recited, "for at least one segment of said received signal".

Claim 23

The Office Action states that the term "DS-CDMA" should be spelled out.

Claim 23 as amended now recites "a direct sequence – code division multiple access (DS-CDMA) signal", as requested by the Examiner.

Claim 24

The Office Action states that "as per claim 24, lines 2-3, "the channel taps of selected fingers" does not have a clear antecedent basis."

Claim 24 as amended now recites, "by summing channel taps of selected fingers", thus correcting the issue of antecedent basis.

Claim 28

The Examiner has stated that "there is only a single quantizing step in the body of the claim. For a method claim, the body of the claim should be followed by a sequence of steps". Applicant is not aware of such a law and believes that a single-element claim is proper under 112, second paragraph. Therefore the rejection of claim 28 under 112, second paragraph should be withdrawn.

Claims 1 and 29 - 32

In the Office Action the Examiner states that the term "'a quantization correction command" is not clear as to what it means, where it is coming from and where is the quantization error?".

The word "correction" has more than one meaning in ordinary English and does not exclusively mean correction of an error. One ordinary meaning of the word "correction" is "neutralization, counteraction". As explained in the specification, the characteristics of a channel, such as, for example, a dynamic fading channel, may in some situations reduce the performance of a receiver. The quantization correction command referred to in the claims

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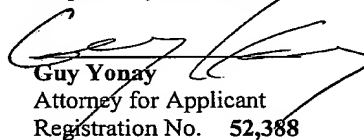
may be used in an attempt to counteract, at least partially, the undesirable effects that a channel may have produced in portions of a received signal.

The Examiner has not established why one of ordinary skill in the art would consider the claims to be vague and indefinite when read in light of the specification.

Based on the above, Applicants respectfully request that the rejection of claims 1 – 3, 5 – 14, 18, 21 – 25 and 28 - 32 under 35 USC 112, 2nd paragraph be withdrawn.

Should the Examiner have any question or comment as to the form, content or entry of this paper, the Examiner is requested to contact the undersigned at the telephone number below. Similarly, if there are any further issues yet to be resolved to advance the prosecution of this application to issue, the Examiner is requested to telephone the undersigned counsel.

Respectfully submitted,


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Dated: July 3, 2003

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Creation date: 08-09-2004
Indexing Officer: RZEFERE - RAHEL ZEFERE
Team: OIPEBackFileIndexing
Dossier: 09493004

Legal Date: 01-26-2004

No.	Doccodes	Number of pages
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Remarks:

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